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TRANSMITTAL FORM <i>(to be used for all correspondence after initial filing)</i>		Application No.	09/405,520
		Filing Date	September 23, 1999
		First Named Inventor	Michael O'Connor
		Art Unit	2134
		Examiner Name	Nalven, Andrew L.
Total Number of Pages in This Submission	23	Attorney Docket Number	42390P6898

ENCLOSURES (check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form <input checked="" type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment / Response <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> PTO/SB/08 <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Basic Filing Fee <input type="checkbox"/> Declaration/POA <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s)	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input checked="" type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): <div style="border: 1px solid black; padding: 5px; margin-top: 5px;">Return receipt postcard</div>
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Firm or Individual name	Joseph Lutz, Reg. No. 43,765 BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
Signature	
Date	December 29, 2004

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FEE TRANSMITTAL for FY 2005

Patent fees are subject to annual revision.

Complete if Known

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Filing Date	September 23, 1999
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☐ Applicant claims small entity status. See 37 CFR 1.27.

TOTAL AMOUNT OF PAYMENT (\$) 500.00

METHOD OF PAYMENT (check all that apply)

☒ Check ☐ Credit card ☐ Money Order ☐ None ☐ Other (please identify): _____

☒ Deposit Account Deposit Account Number: 02-2666 Deposit Account Name: Blakely, Sokoloff, Taylor & Zafman LLP

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee
☒ Charge any additional fee(s) or underpayment of fee(s) under 37 CFR §§ 1.16, 1.17, 1.18 and 1.20. ☒ Credit any overpayments

FEE CALCULATION

1. EXTRA CLAIM FEES

Total Claims	Extra Claims	Fee from below	Fee Paid
Independent Claims	0	50.00	\$0.00
Multiple Dependent	0	200.00	\$0.00

Large Entity	Small Entity	Fee Description
Fee Code Fee (\$)	Fee Code Fee (\$)	
1202 50	2202 25	Claims in excess of 20
1201 200	2201 100	Independent claims in excess of 3
1203 360	2203 180	Multiple Dependent claim, if not paid
1204 300	2204 150	**Reissue independent claims over original patent
1205 300	2205 150	**Reissue claims in excess of 20 and over original patent

SUBTOTAL (1) (\$) 0.00

**or number previously paid, if greater, For Reissues, see below

2. ADDITIONAL FEES

Large Entity	Small Entity	Fee Description
Fee Code Fee (\$)	Fee Code Fee (\$)	
1051 130	2051 65	Surcharge - late filing fee or oath
1052 50	2052 25	Surcharge - late provisional filing fee or cover sheet.
2053 130	2053 130	Non-English specification
1251 120	2251 60	Extension for reply within first month
1252 450	2252 225	Extension for reply within second month
1253 1,020	2253 510	Extension for reply within third month
1254 1,590	2254 795	Extension for reply within fourth month
1255 2,160	2255 1,080	Extension for reply within fifth month
1401 500	2401 250	Notice of Appeal
1402 500	2402 250	Filing a brief in support of an appeal
1403	2403	Request for oral hearing
1451	2451	Petition to institute a public use proceeding
1460	2460	Petitions to the Commissioner
1807 50	1807 50	Processing fee under 37 CFR 1.17(q)
1806 180	1806 180	Submission of Information Disclosure Stmt
1809 790	1809 395	Filing a submission after final rejection (37 CFR § 1.129(a))
1810 790	2810 395	For each additional invention to be examined (37 CFR § 1.129(b))

Other fee (specify) _____

SUBTOTAL (2)

(\$) 500.00

SUBMITTED BY

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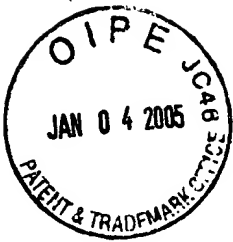
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Our Ref. No.: 42390P6898

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Michael O'Connor, et al.

Application No.: 09/405,520

Filed: September 23, 1999

For: CONTINUOUS VERIFICATION
SYSTEM

Examiner: Nalven, Andrew L.

Art Unit: 2134

Confirmation No.: 9567

APPEAL BRIEF

Mail Stop Appeal Brief - Patent
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Applicants submit the following Appeal Brief pursuant to 37 C.F.R. §41.37(c) for consideration by the Board of Patent Appeals and Interferences. Applicants also submit herewith a check in the amount of \$500.00 to cover the cost of filing the opening brief as required by 37 C.F.R. §1.17(f). Please charge any additional amount due or credit any overpayment to Deposit Account No. 02-2666.

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I. REAL PARTY IN INTEREST

Michael O'Connor, Luke Girard and Luke Schiffer, the parties named in the caption, transferred their rights to that which is disclosed in the subject application through an assignment recorded on September 23, 1999 (010276/0568) in the patent application to Intel Corporation, of Santa Clara, California. Thus, as the owner at the time the brief is being filed, Intel Corporation, of Santa Clara, California is the real party in interest.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences which will affect or be affected by the outcome of this appeal.

III. STATUS OF CLAIMS

Claims 1-3, 5, 6, 8, 10-12, 14-17, 19 and 20 are pending and rejected in this application. Applicants hereby appeal the rejection of all pending claims.

IV. STATUS OF AMENDMENTS

The claims are amended in accordance with the Response Amendment filed on January 23, 2004, wherein Claim 15 was amended. The claim amendment requested in the Response Amendment filed on January 23, 2004 was entered.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The pending claims relate to a continuous verification system. As illustrated with reference to FIG. 1, Claim 1 recites a data collector 102 to receive and collect a stream of biometric data 100 and a data matcher 106 to process the biometric data 100 from the data collector 102 to authenticate the user's identity. (*See*, Applicants' Specification, pg. 3, ¶003 to pg. 4, ¶001.) As illustrated with reference to FIG. 5, in one embodiment, the data matcher 106 includes a database 506 to store a first identity reference for the user and a data compiler 510 coupled to the database 506. (*See*, Applicants' Specification, pg. 12, ¶002.) In the embodiment described, the data compiler integrates samples of data collected by the data collector 102, which are collected over time to create a second identity reference and replace the first identity reference with the second identity reference to establish an updated first identity reference. (*See*, Applicants' Specification, pg. 14, ¶004.)

Dependent Claims 5, 14 and 19 recite analogous claim features regarding embedding of the first identity reference with an input data received from a user. (*See*, Applicants' Specification, pg. 14, ¶003.) As recited by Claim 3, in one embodiment, data matcher 106 further includes a data analyzer 516, as shown in FIG. 5. As illustrated, the data analyzer receives user information and

authenticates the user's identity by comparing the user information and the first identity reference and for presenting a comparison result. (See, Applicants' Specification, pg. 14, ¶003.)

Claims 10 and 15 recite analogous claim features including the receipt and collecting of a stream of biometric data 100, as shown in FIG. 1. As further recited, the biometric data is processed to authenticate a user's identity. A first identity reference and collected biometric data are stored in a database. The biometric data is sampled over time and samples of the biometric data are integrated to create a second identity reference. Once created, the second identity reference replaces the first identity reference to establish an updated first identity reference. (See, Applicants' Specification, pg. 14, ¶001.)

As described at page 13 of Applicants' specification, by integrating a large number of these process data 104 samples over time, the resulting second identity reference will reduce the false acceptance ratio or false rejection ratio over approaches utilizing only a single or small number of data samples.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection involved in this appeal are as follows:

Are Claims 1-3, 6, 10-12, 15-17 and 20 unpatentable under 35 U.S.C. §103(a) as being unpatentable over Matchett, U.S. Patent No. 5,229,764 ("Matchett") in view of Mukohzaka, U.S. Patent No. 5,910,999 ("Mukohzaka") and Okubo, U.S. Patent No. 4,461,028 ("Okubo")?

Are Claims 8 and 20 unpatentable over Matchett, Mukohzaka and Okubo and further in view of Bianco, U.S. Patent No. 6,256,737 ("Bianco")?

Are Claims 5, 14 and 19 unpatentable over Matchett, Mukohzaka and Okubo and further in view of Dulude, U.S. Patent No. 6,310,966 ("Dulude")?

VII. ARGUMENT

A. Overview of the Cited References

1. Overview of Matchett Reference

Matchett teaches "a system activating and analyzing the biometric data from a plurality of biometrically oriented personal identification devices at intermittent intervals selectively allows or prevents continued use of a particular protected system or device by a particular individual." Matchett, Abstract. Matchett's device includes the following steps:

1. The recording of a particular user's relevant biometric characteristics and data.
2. The storage of such data for future reference.

3. The taking of new biometric data, corresponding to that taken at step (1) above, from a prospective user as he or she attempts to use a protected system or device.
4. The comparison of new biometric data to the user's reference biometric data.
5. The acceptance or rejection of the user based upon the results of comparison.
6. The continuous (intermittent and/or unpredictable) repetition of steps 3, 4, and 5, so long as the protected system or device is in use.
7. The rejection of the user and shutdown of the system if at any time during use the user fails more than a prescribed number of comparison tests. Matchett, col. 4, line 58 through col. 5, line 9.

Based on the cited passage above, Matchett teaches a device which records a particular user's relevant biometric characteristics and data (step 1) then stores this data for future reference (step 2). When the user attempts to use a protected system or device, the system or device takes a sample (step 3) and compares the new sample to the reference data (step 4). If the sample matches the stored reference, the user is permitted access to the device or system (step 5). While the device or system is in use, the system or device takes samples for continued acceptance of the user (step 6 – repeating steps 3, 4 and 5). If any sample does not match the reference data, the system or device shuts down (steps 5 and 7).

There is no teaching or suggestion in this section that indicates that the reference data is updated. The reference data remains the reference data throughout the whole process of continued authentication of the user, as evidenced by the repetition of steps 3, 4 and 5 and not steps 1 and 2.

2. Overview of Mukohzaka Reference

Mukohzaka teaches “an individual identification apparatus for confirming identities of individuals by using a pattern recognition technique.” (Mukohzaka, col. 1, lines 9-11.) A reference pattern is picked up at a standard posture and recorded in the apparatus. (See, Mukohzaka, col, 1, lines 48-52.) To confirm whether or not an arbitrary person or a person on file is using the apparatus, “the apparatus picks up a finger print of the arbitrary person and electronically calculates a correlation between the arbitrary individual's fingerprint and a finger print of the specific individual previously recorded in the apparatus.” (Mukohzaka, col. 3, lines 21-30.) “The apparatus judges whether or not the arbitrary person and the specific person are the same individual based on the correlation.” (Mukohzaka, col. 3, lines 30-32.)

Mukohzaka, in Column 4, teaches a first fingerprint is picked up by a charge-coupled device camera to be stored in memory and used as a “reference fingerprint”. (See, lines 33-50.) This process of taking a fingerprint is repeated several times (in the given example, four times) with the person placing his/her finger in (four) different manners. (See, lines 51-54.) As explicitly recited in Mukohzaka:

As a result, four different reference fingerprints A, B, C, and D are stored in the frame memory 5 for the same specific person. (col. 4, lines 56-61.) (Emphasis added.)

Thus, a plurality of (four, in this example) reference fingerprints are stored for the single person in order to enhance flexibility of the apparatus 100 enough to allow for possible distortions or rotations of the target pattern on the FOP 3 during the recognition process as described later. (col. 4, lines 56-61.) (Emphasis added.)

Applicants respectfully submit that Column 4, lines 33-62 do not teach or suggest integrating samples of data over time to create a reference image as the Examiner alleges. Rather, this section teaches a plurality (four, in the given example) of different (A, B, C, and D) reference fingerprints stored for future reference.

Column 8, line 63 through Column 9, line 7 of Mukohzaka teaches that the reference fingerprints (A, B, C, and D) are superimposed on a reference filter to be used in an individual identification operation. This is to enable the individual identification device to not falsely judge a mismatch between the target fingerprint and the reference filter.

“Accordingly, the reference fingerprints can be recorded in the device within a short period of time.” (col. 12, lines 43-45.) After the samples are stored, a CPU performs a Fourier transform on the four reference fingerprints to obtain four complex indications. (See, col. 4, line 62-col. 5, line 20.) The CPU then normalizes the transformed images to produce phase-only patterns, further normalizes each phase-only pattern and adds all the normalized phase-only patterns into a multiple filter Multi. (See, col. 5, line 21-col. 6, line 42.) The CPU calculates a phase conjugate Multi* of the superimposed patterns and stores the Multi* in memory (RAM and hard drive). (See, col. 5, lines 42-63.) When a target fingerprint needs to be matched, the CPU multiplies the target fingerprint (after it has been normalized) with the reference filter Multi* and performs an inverse Fourier transform on the multiplied result. (See, col. 8, lines 14-22.) “The inverse Fourier transform result is a correlation image with a correlation representing the degree to which the reference fingerprint and the target fingerprint are similar to each other.” (col. 8, lines 22-25.)

Hence, Mukohzaka teaches:

As described above, according to the present invention, a plurality of reference fingerprints are electronically superimposed into a multiple filter. Accordingly, the reference fingerprints can be recorded in the device within

a short period of time. Even when the target fingerprint is somewhat rotated or distorted, the device can perform an accurate judgement with a high recognition rate. (col. 12, lines 41-48.)

3. Overview of Okubo Reference

Okubo teaches:

a memory having stored therein two image reference patterns, namely, an original reference pattern and the latest reference pattern. An impression pattern read by a reader is correlated with the latest reference pattern and when the patterns are found to match, the read impression is verified and the latest reference pattern in memory is updated with the use of the read impression pattern. If the patterns are found not to match by the collation, the read impression pattern is collated by the original reference pattern. When the two patterns are found to match by this collation, the read impression is verified. The original reference pattern is updated when desired. (See, Abstract of Okubo.) (Emphasis added.)

As indicated above, the latest reference pattern in memory is updated with the use of the read impression pattern, while the original reference pattern is updated when desired. In other words, the cited passage refers to updating of the latest reference pattern and the original reference pattern, and does not teach or suggest replacing of the latest reference or the original reference pattern. In fact, Okubo describes updating of the reference pattern as follows:

The reference pattern may be prepared in the following manner. The output signals from the image pickup unit are subject to A-D conversion to obtain an item of 8-bit (256 degree) digital data representing the color tone of each picture element P. The collection of these items of data will be referred to as a color tone pattern. When a read impression is found to be genuine by collation, the items of data (comprising 8 bits for each picture element) of the two color tone patterns are added for each picture element, and a threshold value predetermined for each picture element is subtracted from the result. The collection of the results of subtraction, which is also a color tone pattern, is used as a reference pattern. (col. 5, lines 6-19.) (Emphasis added.)

As further described within Okubo:

When the read impressions are verified by this collation, the original reference patterns in the memory 17 are updated by the pattern in the registers A and B individually. (col. 5, lines 49-52.) (Emphasis added.)

Hence, Okubo teaches systems for identifying objects, such as seal stamps and speech, the characteristics of which tend to change with lapse of time or for some other cause. (See, Okubo, col. 2, lines 8-11.) In Okubo, two reference patterns are stored in memory, an original reference pattern and the latest reference pattern. (See, col. 4, lines 40-42, col. 4, lines 61-64 and col. 6, lines 6-16.) The latest reference pattern is updated every time the pattern is verified to be genuine. (See, Okubo, col. 4, lines 42-48 and lines 61-64.)

4. Overview of Bianco Reference

Bianco describes a system, method and computer program product that utilizes biometric measurements for the authentication of users to enterprise resources. As shown in FIGS. 1, 2 and 5, the system includes a biometric server 104 that stores the engine and collections of data required by the system to authenticate users. As illustrated with reference to FIG. 5 of Bianco, the collections of data include biometric templates 502, biometric policies 504, biometric groups 506, biometric device IDs 508, user IDs 510, computer IDs 512 and application IDs 514 (*See*, col. 2, lines 53-60.) As further illustrated in FIG. 1:

The types of data stored in the biometric server 104 are partially determined through the operations of an enrollment station and an administration station. The enrollment station is used to enroll users into biometric system. The administration station is used to perform overall management duties and to initially set up the data and biometric server. ... The biometric policies of the present invention provides flexibility to a level of production for individual enterprise resources. ... In other words, the present invention can tailor the authentication level based on probability that each user must pass before the user gains access to enterprise resources (e.g., 1/1,000, 1/10,000, or 1/1,000,000 that the user is who he claims to be). (col. 3, lines 7-32.)

5. Overview of Dulude Reference

Dulude describes an end-to-end security mechanism binding the biometric identification of consumers with digital certificates. As illustrated with reference to FIGS. 3-5 of Dulude:

The biometric registration section 24 processes user biometrics and associated inputs to generate biometric certificates which are unique to the user, and which are stored in memory such as a biometric database and/or smart card. ... Referring to FIG. 3, the registration section 24 has a set of input devices, including a registration biometric input device 26 and a user input device 28. The biometric input device 26 generates registration of biometric data from the physical characteristics of the user such as fingerprints, hand geometry, iris and retinal appearance, and speech patterns. (col. 4, lines 15-31.)

As shown in FIG. 3 of Dulude:

Biometric database 66 is built using for example a registration process which individuals are required to provide proof of identity; that is, identification information such as a birth certificate, a drivers license, provided to a registration authority. Once the registration authority is satisfied with such proof, the identification information is entered into the registration system and biometric measurements are taken concurrently using at least one biometric input device. (col. 5, lines 15-24.)

FIGS. 4-5 of Dulude illustrate an electronic transaction using transaction system 40, as shown in FIG. 4. As is described by Dulude:

The set of data transmissions transmitting the transaction biometric data 46, the transaction first data 50, and the digital signature 58 may be sent as separate bitstreams and/or packets, or otherwise may be sent together by appending the associated data sequences using a concatenator, such as an adder for bitwise adding of the data sequences. In addition, software may be used to append such data. The data 46, 50, and 58 may be sent to the network 60, which may include telephone networks, satellite communications and/or the Internet. (col. 6, lines 18-27.)

B. Rejection of Claims 1-3, 6, 10-12, 15-17 and 20 As Obvious Over Matchett in View of Mukohzaka and Okubo

1. Errors of Law and Fact in the Rejection

For the reasons provided below, the Examiner has failed to establish a *prima facie* case of obviousness in view of the references of record. The Federal Circuit Court of Appeals in *In re Rijckaert*, 9 F.3d 1531, 28 U.S.P.Q. 2d 1955 (Fed. Cir. 1993) held that:

In rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a *prima facie* case of obviousness. . . . "A *prima facie* case of obviousness is established when the teaching from the prior art itself would appear to have suggested the claimed subject matter to a person of ordinary skill in the art." . . . If the examiner fails to establish a *prima facie* case, the rejection is improper and will be overturned. (Emphasis added.) 9 F.3d at 1532, 28 U.S.P.Q. 2d at 1956.

Applicants respectfully submit that the combined teachings of Matchett in view of Mukohzaka and further in view of Okubo would not have suggested the claimed invention to one of ordinary skill in the art, as required to establish a *prima facie* case of obviousness. *Id.* Hence, a *prima facie* case of obviousness has not been established and the rejection is erroneous and should be overturned. *Id.*

As correctly pointed out by the Examiner:

Matchett's disclosure outlined above does not include a data compiler to integrate samples of data collected over time to create a second identity reference or the replacing of the first identity reference with the second identity reference. (See, pg. 4, ¶4 of the Final Office Action mailed July 8, 2004.)

As a result, the Examiner cites Mukohzaka, which according to the Examiner discloses:

A fingerprinting system that integrates samples of data collected over time. (Mukohzaka, col. 6, lines 40-63, col. 8, lines 14-25, col. 12, lines 41-48.) (See, pg. 4, ¶4 of the Final Office Action mailed July 8, 2004.)

According to the Examiner:

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to utilize Mukohzaka's integration method in order to reduce false rejection and false acceptance ratios. (Mukohzaka, col. 1, lines 45-56.) Further, at the time the invention was made, it would

have been obvious to one of ordinary skill in the art to utilize Okubo's method of updating identity references because it offers the advantage of ensuring that the identity of an object can be established correct at all times, even when the characteristics of the object change. (Okubo, col. 2, lines 12-32.) (See, pg. 5, ¶1 of the Final Office Action mailed July 8, 2004.)

Applicants respectfully submit that the modification of Matchett in view of Mukohzaka and further in view of Okubo would render Mukohzaka unsatisfactory for its intended purpose. As indicated by the Federal Circuit:

If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984).

Here, Okubo teaches a system for identifying objects, such as seal stamps and speech, the characteristics of which tend to change with lapse of time or for some other cause. (See, Okubo, col. 2, lines 8-11.) In Okubo, two reference patterns are stored in memory, an original reference pattern and the latest reference pattern. (See, col. 4, lines 40-42, col. 4, lines 61-64 and col. 6, lines 6-16). The latest reference pattern is updated every time a pattern is verified as genuine. (See, Okubo, col. 4, lines 42-48 and lines 61-64.)

As discussed above, Mukohzaka teaches that a plurality of reference fingerprints are taken at initial registration time and superimposed to form a multiple filter that is never updated (see Mukohzaka col. 8, line 63 to col. 9, line 7.) Mukohzaka teaches that the reference fingerprints are taken in different manners:

in order to enhance flexibility of the apparatus 100 enough to allow for possible distortions or rotations of the target pattern on the FOP 3 during the recognition process. (Mukohzaka, col. 4, lines 56-61.)

As a result:

Even when the target fingerprint is somewhat rotated or distorted, the device can perform an accurate judgement with a high recognition rate. (col. 12, lines 46-48.)

Applicants respectfully submit that modification of Mukohzaka according to an update process, such as taught by Okubo, would reduce the reliability of Mukohzaka by replacing reference fingerprints taken in several different manners with a then current sample. Applicants respectfully submit combining these references would produce an unsatisfactory, inferior product.

Specifically, Mukohzaka's multiple filter, formed by combining a plurality of reference fingerprints, would be subsequently updated (replaced) by Okubo's single, latest verified reference fingerprint, which as noted above may be "rotated or distorted." Thus, the flexibility of the multiple filter taught by Mukohzaka would be completely lost, once replaced by Okubo's single, latest reference fingerprint; the multiple filter taught by Mukohzaka would serve no purpose

beyond the first verification. Therefore, at least for these reasons, Applicant respectfully submits there is no motivation or suggestion to combine the teachings of Mukohzaka and Okubo to read on the elements of claims 1, 10 and 15. Id.

Furthermore, case law has established that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent the teaching or suggestion supporting such combination. ACS Hospital Sys., Inc. v. Montefiore Hospital, 732 F.2d. 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984). Moreover, one cannot find obviousness through hindsight to construct a claimed invention from elements of the prior art. In re Warner, 379 F.2d 1011, 1016, 154 U.S.P.Q. 173, 177 (C.C.P.A. 1967).

Here, the teachings of Okubo are incompatible with the teachings of Mukohzaka and thus, there is no suggestion or motivation to combine these references. The proper motivation or suggestion to combine is lacking since, in Mukohzaka, there is no need for the multiple filter taught by Mukohzaka to be updated since the multiple filter enables the stated goal of Mukohzaka to:

Even when the target fingerprint is somewhat rotated or distorted, the device can perform an accurate judgement with a high recognition rate. (col. 12, lines 46-48.)

Also, Okubo does not need samples integrated over time since the latest reference is updated every time the reference is verified and integrating samples over time is simply not contemplated by the teachings of Okubo. Combining of updating the reference every time the reference is verified, as taught by Okubo, and integrating a plurality of samples to form a multiple filter, as taught by Mukohzaka, are two teachings that are mutually exclusive for the purpose of providing the proper motivation or suggestion to combine in this instance.

Applicants respectfully submit that the references of Matchett, Mukohzaka and Okubo, as well as the skill in the art, would not provide a suggestion or motivation for combining the reference teachings, as required to establish a *prima facie* case of obviousness. Id. Therefore, Applicants respectfully submit that the Examiner fails to establish that it would be obvious to combine the missing elements provided by Mukohzaka and Okubo with the teachings of Matchett. Id.

Consequently, Applicants respectfully submit that Applicants' claimed invention could only be arrived at through inappropriate hindsight. Hence, a *prima facie* case of obviousness has not been established and the rejection is erroneous and should be overturned. Id.

2. Specific Limitations Not Described in the Prior Art

Claims 1, 10 and 15 recite analogous claim features. Claim 1 is representative. Independent Claim 1 recites the following claim features, which is neither taught nor suggested by Matchett, Mukohzaka, Okubo or the references of record:

a data compiler, coupled to the database, the data compiler to integrate samples of data collected by the data collector collected over time to create a second identity reference and replace the first identity reference with the second identity reference to establish an updated first identity reference.

3. Explanation Why Such Limitations Render the Claims Non-Obvious Over the Prior Art

The Examiner fails to illustrate that the combination or modification of Matchett in view of Mukohzaka and further in view of Okubo teaches or suggests each of the recited features of the claimed invention. However, the case law is clear in establishing that “to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.” In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974).

Applicants respectfully submit that claims 1, 10 and 15 recite the collection of data over time to create a second identity reference. Furthermore, this second identity reference is used to replace a first identity reference. Since the second identity reference replaces the first identity reference, claims 1, 10 and 15 inherently recite that the second identity reference is formed subsequent to the first identity reference.

Conversely, Mukohzaka teaches that a plurality of reference fingerprints are superimposed to form a multiple filter (see Mukohzaka col. 8, line 63 to col. 9, line 7). Applicants respectfully submit that this multiple filter is analogous to Applicant’s first identity reference which is used to authenticate received reference fingerprints. As indicated above, Mukohzaka teaches away from replacement of the multiple filter since this multiple filter enables the stated goal of Mukohzaka of providing an accurate judgement with a high recognition rate, even when a target fingerprint is somewhat rotated or distorted (see Mukohzaka col. 12, lines 46-48).

Accordingly, Applicants respectfully submit that the combination of Matchett in view of Mukohzaka and further in view of Okubo fail to teach or suggest the collection of data over time to create a second identity reference as recited by claims 1, 10 and 15. Accordingly, Applicants respectfully submit that the Examiner fails to establish a *prima facie* case of obviousness in the claimed invention since all claim limitations are not taught or suggested by the prior art references of Matchett in view of Mukohzaka and further in view of Okubo. Id.

Furthermore, the claimed invention recites replacement of a first reference pattern with an updated second reference pattern. Conversely, at col. 8, line 63 - col. 9, line 7, Mukohzaka teaches that the reference fingerprints (A, B, C, and D) are superimposed to form a multiple filter to

be used in an individual identification operation. This is to enable the individual identification device to not falsely judge a mismatch between the target fingerprint and the reference filter.

Applicants respectfully submit that Mukohzaka teaches away from replacement of the multiple filter taught by Mukohzaka, since such a modification would prohibit:

flexibility of the apparatus 100 enough to allow for possible distortions or rotations of the target pattern on the FOP 3 during the recognition process as described later. (col. 4, lines 59-61.)

As such, modification of Mukohzaka to replace the multiple filter taught by Mukohzaka with a single, latest verified reference fingerprint as taught by Okubo, could introduce false mismatches between a target fingerprint and the multiple filter, which would prohibit the stated goal of Mukohzaka:

Even when the target fingerprint is somewhat rotated or distorted, the device can perform an accurate judgment with a high recognition rate. (col. 12, lines 46-48.)

Yet, the case law clearly established that “it is improper to combine references where the references teach away from their combination. In re Grasselli, 713 F.2d 731, 743, 218 U.S.P.Q. 769, 779 (Fed. Cir. 1983). Accordingly, Applicants respectfully submit that the Examiner is prohibited from combining Matchett in view of Mukohzaka and further in view of Okubo since Matchett teaches away from including replacement of the multiple filter as taught by Okubo, as recited by Claims 1, 10 and 15. Id.

In fact, Applicants submit that the Examiner’s proposed modification of Mukohzaka to replace the multiple filter, as taught Mukohzaka, with the single, latest verified reference finger print, as taught by Okubo, runs contrary to the explicit teachings of Mukohzaka. One of ordinary skill in the art would not be motivated to modify Mukohzaka in a manner specifically contrary to Mukohzaka’s own teachings. Accordingly, Applicants’ claimed invention could only be arrived at through inappropriate hindsight.

Accordingly, Applicants respectfully submit that the combined teachings of Matchett in view of Mukohzaka and further in view of Okubo would not have suggested the claimed invention to one of ordinary skill in the art, as required to establish a *prima facie* case of obviousness. Rijckaert, supra. Therefore, a *prima facie* case of obviousness of the claims is not established and the rejection of Claims 1-3, 6, 10-12, 15-17 and 20 should be overturned. Id.

C. Rejection of Claims 8 and 20 As Obvious Over Matchett, Mukohzaka and Okubo and Further in View of Bianco

The Examiner has made the same errors as described previously with respect to the rejected Claims 1, 3, 6, 10-12, 15-17 and 20. In addition, the Examiner has failed to show a teaching or suggestion to modify Matchett in view of Mukohzaka, in view of Okubo and further in

view of Bianco. Hence, the Examiner has failed to establish a *prima facie* case of obviousness in view of the references of record. Id.

As indicated above, Mukohzaka teaches away from updating of the multiple filter, as taught by Mukohzaka, every time a reference is verified, as taught by Okubo, since such modification would prohibit the stated goal of Mukohzaka of enabling an accurate judgment with a high recognition rate, even when a target fingerprint is somewhat rotated or distorted (*See*, col. 12, lines 46-48). In other words, providing an accurate judgment, as required by Mukohzaka, would be prohibited since the single latest verified reference fingerprint, as taught by Okubo, would replace the multiple filter, as taught by Mukohzaka, which is formed by taking a fingerprint several times. (*See*, col. 4, lines 51-54 of Mukohzaka.)

Regarding the Examiner's citing of Bianco, according to the Examiner:

Bianco discloses a biometric authentication system geared towards enterprise networks that place user biometric data on a biometric server that stores the collection of data required by the system to authenticate users. (col. 2, lines 57-58.) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to utilize Bianco's network based system, as it would allow a group to deploy an authorization system across a wide geographic network. (*See*, pg 6, ¶2 of Final Office Action mailed July 8, 2004.)

Assuming, arguendo, that Bianco discloses a biometric server that stores a collection of data required by the system to authenticate users, Applicants respectfully submit that the Examiner's citing of Bianco fails to rectify the deficiencies in the combination of Matchett in view of Mukohzaka and further in view of Okubo.

In fact, Applicants submit that modification of Matchett in view of Mukohzaka and in view of Okubo and further in view of Bianco, to of the multiple filter taught by Mukohzaka with a single, latest verified reference fingerprint, as taught by Okubo, runs contrary to the explicit teachings of Mukohzaka. One of ordinary skill in the art would not be motivated to modify Mukohzaka in a manner explicitly contrary to Mukohzaka's own teachings. Accordingly, Applicants' claimed invention could only be arrived at through inappropriate hindsight.

Therefore, Applicants respectfully submit that the Examiner fails to establish that it would be obvious to combine the missing elements provided by Mukohzaka, Okubo and Bianco with the teachings of Matchett. Accordingly, Applicants respectfully submit that the Examiner is expressly prohibited from combining Matchett in view of Mukohzaka in view of Okubo and further in view of Bianco, since Mukohzaka teaches away from replacement of the multiple filter, as taught by Mukohzaka, with a reference each time the reference is verified, as taught by Okubo. Grasselli, supra. Consequently, Applicants respectfully submit that Applicants' claimed invention could only be arrived at through inappropriate hindsight.

Furthermore, Applicants respectfully submit that the combination of Matchett in view of Mukohzaka and further in view of Okubo fail to teach or suggest the collection of data over time to create a second identity reference as recited by the claimed invention. Applicants respectfully submit that the Examiner's citing of Bianco fails to rectify the deficiencies in the combination of Matchett in view of Mukohzaka and further in view of Okubo to teach or suggest each of the features of the claimed invention. Accordingly, Applicants respectfully submit that the Examiner fails to establish a *prima facie* case of obviousness of the claimed invention since all claim features are not taught or suggested by the prior art references of Matchett in view of Mukohzaka in view of Okubo and further in view of Bianco. Royka, *supra*.

Consequently, Applicants respectfully submit that the combined teachings of Matchett in view of Mukohzaka in view of Okubo and further in view of Bianco, would not have suggested the claimed invention to one of ordinary skill in the art, as required to establish a *prima facie* case of obviousness. Rijckaert, *supra*. Hence, a *prima facie* case of obviousness has not been established and the rejection of claims 8 and 20 is erroneous and should be overturned. *Id*.

D. Rejection of Claims 5, 14 and 19 As Obvious Over Matchett, Mukohzaka and Okubo and Further in View of Dulude

The Examiner has made the same errors as described previously with respect to the rejected Claims 1, 3, 6, 10-12, 15-17 and 20. In addition, the Examiner has failed to show a teaching or suggestion to modify Matchett in view of Mukohzaka, in view of Okubo and further in view of Dulude. Hence, the Examiner has failed to establish a *prima facie* case of obviousness in view of the references of record. *Id*.

As indicated above, Mukohzaka teaches away from updating of the multiple filter, as taught by Mukohzaka, with a single latest verified reference fingerprint, as taught by Okubo, since such modification would prohibit the stated goal of Mukohzaka of enabling an accurate judgment with a high recognition rate, even when a target fingerprint is somewhat rotated or distorted (*See*, col. 12, lines 46-48). In other words, providing an accurate judgment, as required by Mukohzaka, would be prohibited since the single updated reference would replace the multiple filter, as taught by Mukohzaka, which is formed by taking a fingerprint several times. (*See*, col. 4, lines 51-54 of Mukohzaka.)

Regarding the Examiner's citing of Dulude, according to the Examiner:

Dulude shows a system of embedding an identity reference in the form of a digital certificate is attached to user data (col. 2, lines 57-58.) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to utilize Dulude's biometric digital certificates in order to allow verification of the source of user data transmitted across a network. (*See*, pg 6, ¶2 of Final Office Action mailed July 8, 2004.)

Assuming, arguendo, that Dulude discloses biometric digital certificates in order to allow verification of the source of user data transmitted across a network, Applicants respectfully submit that the Examiner's citing of Dulude fails to rectify the deficiencies in the combination of Matchett in view of Mukohzaka and further in view of Okubo. Specifically, replacement of the multiple filter, as taught by Mukohzaka, by a received reference each time the reference is verified, as taught by Okubo, prohibits the stated goal of Mukohzaka of providing an accurate judgment with a high recognition rate, even when a target fingerprint is somewhat rotated or distorted. (See, col. 12, lines 46-48.)

In fact, Applicants submit that modification of Matchett in view of Mukohzaka and in view of Okubo and further in view of Dulude, to provide replacement of the multiple filter based on a verified reference, as taught by Okubo, runs contrary to the explicit teachings of Mukohzaka. One of ordinary skill in the art would not be motivated to modify Mukohzaka in a manner explicitly contrary to Mukohzaka's own teachings.

Accordingly, Applicants respectfully submit that the Examiner is expressly prohibited from combining Matchett in view of Mukohzaka in view of Okubo and further in view of Dulude, since Mukohzaka teaches away from replacement of the multiple filter, as taught by Mukohzaka, with a reference each time the reference is verified, as taught by Okubo. Grasselli, supra. Consequently, respectfully submit that Applicants' claimed invention could only be arrived at through inappropriate hindsight.

Furthermore, Applicants respectfully submit that the combination of Matchett in view of Mukohzaka and further in view of Okubo fail to teach or suggest the collection of data over time to create a second identity reference as recited by the claimed invention. Applicants respectfully submit that the Examiner's citing of Dulude fails to rectify the deficiencies in the combination of Matchett in view of Mukohzaka and further in view of Okubo to teach or suggest each of the features of the claimed invention. Accordingly, Applicants respectfully submit that the Examiner fails to establish a *prima facie* case of obviousness of the claimed invention since all claim features are not taught or suggested by the prior art references of Matchett in view of Mukohzaka in view of Okubo and further in view of Dulude. Royka, supra.

Consequently, Applicants respectfully submit that the combined teachings of Matchett in view of Mukohzaka in view of Okubo and further in view of Dulude, would not have suggested the claimed invention to one of ordinary skill in the art, as required to establish a *prima facie* case of obviousness. Rijckaert, supra. Therefore, a *prima facie* case of obviousness of the claims is not established and the rejection of Claims 5, 14 and 19 should be overturned. Id.

VIII. CONCLUSION AND RELIEF

Based on the foregoing, Applicants request that the Board overturn the rejection of all pending claims and hold that all of the claims of the present application are allowable.

Respectfully submitted,

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12/29/04
Date

IX. APPENDIX

The claims involved in this Appeal are as follows:

1. (Previously Presented) An apparatus for authenticating a user's identity, comprising:
 - a. a data collector to receive and collect a stream of biometric data; and
 - b. a data matcher to process the biometric data from the data collector to authenticate the user's identity, wherein the data matcher includes:
 - a database to store a first identity reference for the user, and
 - a data compiler, coupled to the database, the data compiler to integrate samples of data collected by the data collector collected over time to create a second identity reference and replace the first identity reference with the second identity reference to establish an updated first identity reference.
2. (Original) The apparatus of claim 1, wherein the data collector further comprising:
 - a. a plurality of sensors to detect the stream of biometric data; and
 - b. a signal converter to convert the biometric data from the sensors into storable data and send the storable data to the data matcher.
3. (Previously Presented) The apparatus according to claim 1, wherein the data matcher further comprises:
 - a data analyzer, coupled to the database, to receive user information and to authenticate the user's identity by comparing the user information and the first identity reference and for presenting a comparison result.
4. (Cancelled)
5. (Previously Presented) The apparatus according to claim 3, wherein the data analyzer further receives input data from the user and embeds the first reference identity in the input data.
6. (Original) The apparatus according to claim 1 is coupled to a network.
7. (Cancelled)
8. (Previously Presented) The apparatus according to claim 3, wherein the user information can be downloadable from an external database through a network.

9. (Cancelled)
10. (Previously Presented) A method for authenticating a user's identity, comprising:
- a. receiving and collecting a stream of biometric data;
 - b. processing the biometric data to authenticate the user's identity;
 - c. storing a first identity reference and collected biometric data in a database;
 - d. sampling the collected biometric data over time;
 - e. integrating the samples of collected biometric data to create a second identity reference; and
 - f. replacing the first identity reference with the second identity reference to establish an updated first identity reference.
11. (Original) The method according to claim 10, wherein 10(a) further comprises:
- a. detecting the stream of biometric data by a plurality of sensors;
 - b. converting the biometric data from the sensors into storable data; and
 - c. sending the storable data to a data matcher.
12. (Previously Presented) The method according to claim 10, wherein 10(b) further comprises:
- a. receiving user information;
 - b. authenticating the user's identity by comparing the user information and the first identity reference; and
 - c. presenting a comparison result.
13. (Cancelled)
14. (Previously Presented) The method according to claim 12, wherein 12(b) further comprises:
- a. receiving input data from the user; and
 - b. embedding the first reference identity in the input data.
15. (Previously Presented) A machine readable medium having embodied thereon instructions, which when executed by an electronic system, causing the electronic system to:
- a. receive and collect a stream of biometric data;
 - b. process the biometric data to authenticate the user's identity;

- c. store a first identity reference and collected biometric data to a database;
- d. sample the collected biometric data over time;
- e. integrate the samples of collected biometric data to create a second identity reference; and
- f. replace the first identity reference with the second identity reference to establish an updated first identity reference.

16. (Original) The machine readable medium according to claim 15, wherein said instructions for 15(a) further comprises:

- a. detecting the stream of biometric data by a plurality of sensors;
- b. converting the biometric data from the sensors into storable data; and
- c. sending the storable data to a data matcher.

17. (Previously Presented) The machine readable medium according to claim 15, wherein said instructions for 15(b) further comprises:

- a. receiving user information;
- b. authenticating the user's identity by comparing the user information and the identity reference; and
- c. presenting a comparison result.

18. (Cancelled)

19. (Previously Presented) The machine readable medium according to claim 17, wherein said instructions for 17(b) further comprises:

- a. receiving input data from the user; and
- b. embedding the reference identity in the input data.

20. (Original) The machine readable medium according to claim 15, wherein the electronic system is coupled to a network.



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